

Downpipe Installation

By Nathan Kennedy
September 13, 1999

Introduction

Please read all instructions before starting. You may find something you have to purchase or need during the install. Make sure that when attempting this mod that you have a day of downtime for your car (i.e. you do not do this Sunday night and have to get to work in the car on Monday morning). You will have to make sure the car is COMPLETELY cool before starting (you are working on one of the hottest parts of the car and will get burned if you do this with the car hot at all). I let mine sit overnight to be safe. You will want to get ready for this mod the night before by removing all the intake hoses (the ones that go to the black air cleaner box). This will give you room to tighten the downpipe screws. You will also want to remove the heat shield around the ABS unit, I will get more into the steps involved in this below. There is also a heat shield around the bolts on the pre-cat, you can remove this by taking out a small bolt (you will be able to see it once the intake hoses are removed). You will understand the small amount of space you have to work with once this shield is removed. I was confused about where the bolts were until I removed this. Also the car will need to be jacked up and put on jack stands. You will be doing most of the work from the bottom of the car. Once all of the intake hoses and ABS shield are off, you will want to hit the bolts of the pre-cat with some Liquid Wrench to loosen the bolts. You can get at the top two from the top of the engine, but might have to crawl under the car to get at the bottom two bolts. The top rear bolt is hard to see, but you can get your hand in there to feel it. You can use that small red plastic hose that comes with the Liquid Wrench to spray that bolt. I will go into the tools needed in the steps below. This was mainly to let you understand the first part of this MOD.

Tools Needed

- 12mm socket
- 14mm socket
- 12mm wrench
- O2 sensor socket (these can be purchased from auto parts stores)
- 8mm allen wrench and/or one that will fit on your ratchet (this is better)
- Liquid Wrench, WD40, whatever
- masking tape or hot glue gun
- fiberglass wrap (optional - avail at [Summit Racing](#) for about \$25.00)
- Hi-temp 1200 degree coating (optional - only needed if you get the fiberglass wrap)

Disassembly (pre-cat removal)

1. I am assuming as stated above that the car has cooled over night and you have removed the intake hoses. If you need help on this look for an article about installing an intake, it should cover removing these hoses.
2. As promised I am going to explain how to remove the heat shield around the ABS unit. These are four 12mm bolts that hold this down, two actually screw into it, and the other two hold the entire ABS unit down which also holds down the shield. You will need an extension for the 12mm socket to get at these. Remove all 4 bolts, then the shield should slide around. You might have to remove one of the black hoses going into the manifold to be able to wiggle the heat shield out. It should just work its way out.
3. Now you should be ready to get at that heat shield around the pre-cat bolts. Remove the screw that is holding it on and it should come free. This is a real pain to get out, but you must get it out to be able to slide the pre-cat out from under the car. I waited until I had the bolts free on the pre-cat, then I could slide it out; you might want to just slide it out of the way for now, as it might not come out until you can move the pre-cat.
4. Now spray all the bolts and studs again with liquid wrench, and get under the car. You are now ready to start at the pre-cat bolts. Use the 12mm socket and work at them until they come loose. The entire stud may come out with the nut that you are trying to take off; this is OK, you need to take the studs out anyway. Be very careful when doing this, because if you break off a stud you will have to remove the turbo to get the broken piece out (not to scare you though, I did not break one). You can get the top two out from the top of the car, and the bottom two out from the bottom of the car.

5. Once these are removed take the 14mm socket and remove the two bolts holding the pre-cat to the mid-pipe.
6. Now the pre-cat should slide off from under the car. You may have to deal with that pre-cat heat shield now, just take your time and work it out.
7. Once it is out you may want to feel how much lighter your downpipe is than the pre-cat - it is amazing. Also take notice to how dirty the pre-cat is, remember that one of the main reasons you are doing this is to make sure that the pre-cat will not block air to the main cat and cause you to overheat. You can see how this could happen with the pre-cat still installed.
8. If the studs did not come out you will have to do this now. I had to screw the nut back on until it was a little tight, then spray with liquid wrench and work at them until the nut screwed them back out. This seemed the safest way to me. Do not just grab them with vise grips and try to turn them out, then you will have destroyed the threads and will have no other way to get them out. Do it the way I stated, and take your time to get them out.

Installation

I purchased my stainless steel downpipe from [N-tech Engineering](#), and it was not ceramic coated, so I decided to purchase some fiberglass wrap to try to reduce some heat. Hotter air flows better and faster than colder air (PV=nRT remember from physics!), so by wrapping the pipe the heat stays in the pipe and does not get dumped to the engine. This helps reduce engine heat and also helps the exhaust flow faster. You can get the fiberglass wrap from [Summit Racing](#) for \$25.00. If you do this you will also have to spray it with a hi temp ceramic coating that you can get at Autozone for \$5.00. You can also send the pipe to [Jet Hot](#) to have it coated. It cost about \$70.00 to have this done. This is only an option and does not have to be done.

1. Now you are ready to install the pipe. You should have two gaskets from each end of the pre-cat; you will need these for each end of the downpipe now. Since you took the studs out, you have nothing to hold the gasket to, so you are going to have to attach it to the downpipe so that you have get the downpipe screwed down. Some people say to use some masking tape to hold it on, but I used a little hot glue right around the edges of the downpipe. I figured it would melt right off and evaporate anyway; this worked great for me.
2. Now line up the 4 holes on the downpipe with the four holes that are now there since you removed the studs when taking off the pre-cat. You might ask "why could I not have left the studs in and used them?" Well most downpipes will not fit on with the studs still in since they have a larger bend in the pipe. A few like one that HKS makes will fit, but even if it does fit, the studs might come out as you are tightening the nuts on them. Just to be safe and do it right, take them all out and use bolts to hold on the downpipe. I had a little trouble getting the holes to line up and getting the bolts started. You may need someone to hold the downpipe in place as you start the bolts by hand. I have 8mm allen bolts, you might be using some other head on the end of the bolt.
3. Make sure that you can get the bolt flush against the outside of the downpipe before you start screwing them down, because one edge of the pipe is where the bend in the pipe is, and you do not have much room to play with. Also the bolts must not be too long, you did notice the length of the studs, do not have bolts too much bigger than that. Once you get about two of the screws started by hand try to let go of the downpipe and work on the other two bolts, you may have to wiggle the downpipe to get the holes to line up. Just keep working at it, and make sure that they go in easy, you do not want to cross-thread the holes. I added a little oil to the bolts to help them go in.
4. Once all of the four bolts are tight you can attach the downpipe to the main-cat. Remember to use the gasket that was there when you removed the pre-cat from the main-cat. I did not replace either of them, because they looked OK and one of them costs about \$45.00. This should just line up correctly. If it does not, I have heard of people pushing on the exhaust from the rear of the car and this helps line it up.
5. Now I did not reattach the heat shield around the pre-cat bolts. You might be able to, but it should not be needed.
6. You will also need to reinstall the O2 sensor. This may be easier to do from under the car now.

7. Also reinstall the heat shield for the ABS unit. I also cleaned mine since it was dirty.
8. Reinstall all the hoses that you took off including the one that goes into the manifold that you had to remove to get the ABS heat shield off.
9. If you sprayed the pipe with any hi-temp coating it is going to smoke for a little once you start the car, be warned this is not bad, it is cooking onto the pipe (this was a little scary).
10. Now start the car and it should be louder. Let it run a little first and make sure that it is not running hot or anything and make sure it is not leaking exhaust. If it is you did not tighten it enough, or one of the gaskets may be bad.

Post-Installation

1. After you drive it for a few days you will want to re-tighten the bolts since they might loosen with the heat of the car. This is just a safety measure.
2. You should be ready to go now, don't you love hearing the sound of those turbos spinning? I did not turn the CD player on for about a week after I got my downpipe installed, because I loved that sound. Also check the under hood temp out, it is much cooler after a hard run in the car.

Date: Sat, 8 Aug 1998 10:59:16 -0600
From: "Scott C. Johnson"

I just finished installing my ART downpipe and thought I would offer my thoughts, and possibly save the rest of you some hassle. I haven't really got any comment regarding removing the stock pre-cat. I had no problems at all, and I did apply plenty of Liquid Wrench the night before. Remember to disconnect the O2 sensor. I removed all 4 nuts and studs from under the car. Also, drop the front end of the cat as well. You will have a much easier time getting things to line up if that cat is out of the way.

Once the pre-cat and studs are gone you've got to try to line up the downpipe. Before you do that be sure to remove the gasket and check the alignment of the holes with those on the downpipe flange. I neglected to do so and spent 2 painful hours unable to install the new allen bolts. I seem to remember someone else having this fitment problem as well. I just ground away about 1mm of material from around the offending hole and the pipe went on in 5 minutes. So again, be sure to do this. As long as you're grinding, make sure you can push the new bolts through each of the holes. On mine I had to remove a tiny bit of material from around the hole that is kind of blocked by the pipe itself to allow that allen bolt to slide through freely.

To line up the pipe I installed two of the stock studs just enough to catch the threads. Then I slipped the pipe on and began installing the new allen bolts. Use hi-temp anti-seize compound here to make it easier the next time you have to remove this thing. Once two of the new bolts are in place the studs can be removed, and replace with the other two bolts. Buy an standard 8mm allen key and an 8mm allen key that fits your 3/8" ratchet. I know that the pipe came with 3 replacement bolts, and you're supposed to reuse one of the old studs. It was very unclear to me which stud should be left in place, so I went out and bought another stainless allen bolt. That way you don't have to reuse those old studs and nuts either. I tightened the top two from above the engine compartment and the lower 2 while lying on my back.

Attach the new mounting bracket and bolt up the lower end of the downpipe. I had to bend my bracket a bit to get the holes on the bracket and the pipe to line up. Be sure to replace your O2 sensor and that's about it for the downpipe. Slide the cat back into place and bolt it up.

So, as you can see it wasn't a perfect fit, but it was close enough that with a bit of work it went on just fine. I do like the construction of the pipe and it's sure nice to have that miniature nuclear reactor out from under my hood. If you've got any questions feel free to ask away. Good luck.

Date: Sun, 11 Oct 1998 10:07:46 -0600

From: David Beale

I would consider using stainless bolts anywhere on the exhaust system. They will be much easier to remove later than nuts on studs. Be sure to use high temp. anti-seize on the threads.

Date: Sun, 11 Oct 1998 10:47:54 EDT

From: Dunder@aol.com

(...seized stud) when I put my downpipe on about a month ago. one of the problems working from the top (upper rear bolt) was not being able to get enough leverage on the nut due to all the crap back there. I did remove the ABS heat shield, which helped. I ended up using a speed handle w/ a socket to fit my ratchet handle as a cheater bar, pulling VERY carefully. I got about a couple of turns on it when the stud just froze. I worked it back and forth a few times, WD40, etc - still wouldn't budge. I figured I was committed, so I kept working it back and forth until it came out. When it did, about 3/16" of threads was missing off the end of the stud.

I spent the next hour w/ an awl and a tap chasing the threads - everything went back together ok, so I consider myself lucky. I can't say as I recommend this procedure, but I didn't know what else to do w/ it.

btw - none of the nuts came off - the studs ended up coming out, which was no big deal. Bonez downpipe came w/ new ones. and I wouldn't be too mad about the heat shield - mine kept getting in the way and was a pain to get out.

Date: Wed, 25 Nov 1998 00:13:54 -0500

From: Scot Kight

Use new studs and nuts, use antisieze. PATIENCE. Get a rag, soak it in liquid wrench, put it on the old studs/nuts, LET THEM SIT OVERNIGHT. LET the liquid wrench do the work. When you start trying to remove the nuts, do it slowly, some might be stuck, kinda move them back and forth to get them started.

REMEMBER THIS. IF a stud breaks with nothing showing, the turbo MUST come out. I had to take mine out when a crappy bolt broke. But the threads were all screwed anyway, so it had to come out anyways.

Date: Tue, 23 Feb 1999 20:10:41 -0500

From: "Northrup, Wilson"

The studs CAME OUT. It was a little difficult to get the pipe on, as it was very difficult to get the studs back in. I should have replaced the studs with new ones.... oh well.

Hint: If this happens to anyone - put some oil on the stud threads, and work them in and out a couple times. This will make the stud easier to get started - when putting the pipe on.

Hint2: Definitely use some sort of method to hold the gasket to the downpipe if your studs come out. Just make sure you can remove the tape, after you get the pipe on there. Replacing that gasket is expensive &